

Over the course of our lives many small movements exert a high level of mechanical stress on our skin. The repetition of these stresses together with the disorganization of the connective fibers (glycolization, elastin degradation, collagen polymerization ...) leads to a loss of elasticity and firmness of the skin, accelerates the aging process and thus the formation of wrinkles.

Mussels have to deal with very similar physical stress situations as our skin. Their threads have to ensure a secure hold on the substrate in order to be able to withstand the changing conditions of their environment (waves, shallows, struggle for space with other mussels, algae ...). Since nature is very good at solving problems, the mussel thread of the *mytilus edulis* is composed of three strong protein microfibers (elastin, exocollagen, fibroin), the specific structure and biomechanical properties of which simultaneously impart resistance and elasticity to the fibers.

Elastin peptide and exocollagen peptide alternate in the thread here. The filament is covered entirely by fibroin (sea silk). The silk fibers appear shiny due to the refraction of light on their surface.

The development experts from Vincience (formerly Laboratoires SEPORGA) have utilized the properties of the mussel thread for cosmetics. Mythuline, the synergistic and balanced mixture of collagen, elastin and silky microfibers, qualitatively and quantitatively improves the connective tissue network of the horny layer.

Used by the horny layer cells as a nutritional supplement, they stimulate their own production. Through their great affinity to keratin, the peptides produce an improved texture of the skin and hair as well as moisture retention. In an *in-vivo* double blind test, an ointment with 5% mythuline was applied to the lower arm of 15 subjects for 3 weeks. 70% of the volunteers noticed an improved smoothness of their skin, compared to 45% for the placebo. Since the peptides are recognized as messenger substances by the cells, they also help the skin to regenerate more quickly.

Diagram of the mussel thread

Felsnaher Teil	Part close to the rock
Muschelnaher Teil	Part close to the mussel
Kollagen	Collagen
Fibroin	Fibroin
Elastin	elastin